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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,711	11/17/2003	Gerhard Langstein	Mo7161D/LeA 35,585	2330

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EXAMINER	
CHOI, LING SIU	
ART UNIT	**PAPER NUMBER**
1713	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/714,711	LANGSTEIN ET AL.	
	Examiner	Art Unit	
	Ling-Siu Choi	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/222,378.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/21/04 & 11/17/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Application is a Division of US Patent Application Serial No. 10/222,378, filed August 16, 2002, now U.S. 6,677,421.

2. This Office Action is in response to the Preliminary Amendment. Claims 9-16 were canceled and claims 1-8 are now pending, wherein claims 1-6 are drawn to a process to prepare isoolefin copolymer; claim 7 is drawn to a mixture of zirconium halide and/or hafnium halide and organic acid halide; claim 8 is drawn to a catalyst.

Claim Rejections - 35 USC § 102

3. **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

> **A person shall be entitled to a patent unless --**
>
> **(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

4. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Dietz (US 4,719,271).

A mixture of	
A	zirconium halides **and / or** hafnium halides
B	an organic acid halides

(summary of claim 7)

Dietz discloses a product made by the contact of (A) a component solution obtained by combining (1) a metal dihalide compound which is selected from the group consisting of Group IIA metals and Group IIB metals of the Periodic Table and (2) a transition metal compound represented in the general formula of **$M(OR)_aX_{b-a}$ with M being zirconium and a being an integer between 0** and 4 and (B) a precipitating agent in a suitable solvent, which can be an organic acid halide in the general formula of **R"COX**, with R" being an alkyl, aryl, or cycloalkyl group or combinations thereof and X being a halide (col. 3, lines 10-26; col. 8, lines 55-64; claim 1). Thus, the present claim is anticipated by the disclosure of Dietz.

5. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Le Brasseur (US 4,465,781).

Le Brasseur disclose a mixture obtained by the contact of an **organic acid halide [R'COX]** with a magnesium alcoholate [$Mg(OR)_2$] and further with an excess of a **transition metal halide,** wherein the transition metal can be **zirconium** (col. 2, line 44; claim 3). Thus, the present claim is anticipated by the disclosure of Le Brasseur.

6. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Young et al.

(WO 92/16477).

Young et al. disclose a catalyst system comprising (A) a soluble adduct of zirconium tetrahalide and an acid chloride [R(C=O)Cl] and (B) an alkyl metal which can be aluminum alkyl (col. 3, lines 61-66; col. , lines 3-8; claim 1).

7. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Dietz (US 4,719,271).

A catalyst comprising	
A	zirconium halides **and / or** hafnium halides
B	an organic acid halides

(summary of claim 7)

Dietz discloses a catalyst prepared by the contact of (A) a component solution obtained by combining (1) a metal dihalide compound which is selected from the group consisting of Group IIA metals and Group IIB metals of the Periodic Table and (2) a transition metal compound represented in the general formula of **$M(OR)_aX_{b-a}$ with M being zirconium and a being an integer between 0** and 4 and (B) a precipitating agent in a suitable solvent, which can be an organic acid halide in the general formula of **R"COX**, with R" being an alkyl, aryl, or cycloalkyl group or combinations thereof and X being a halide (col. 3, lines 10-26; col. 8, lines 55-64; claim 1). Thus, the present claim is anticipated by the disclosure of Dietz.

8. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Le Brasseur (US 4,465,781).

Le Brasseur disclose a catalyst obtained by the contact of an **organic acid halide [R'COX]** with a magnesium alcoholate [$Mg(OR)_2$] and further with an excess of a **transition metal halide,** wherein the transition metal can be **zirconium** (col. 2, line 44; claim 3). Thus, the present claim is anticipated by the disclosure of Le Brasseur.

9. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Young et al. (WO 92/16477).

Young et al. disclose a catalyst system comprising (A) a soluble adduct of zirconium tetrahalide and an acid chloride [R(C=O)Cl] and (B) an alkyl metal which can be aluminum alkyl (col. 3, lines 61-66; col. , lines 3-8; claim 1).

Claim Rejections - 35 USC § 103

10. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

11. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz (US 4,719,271).

A process to prepare isoolefin copolymer	
A	zirconium halides **and / or** hafnium halides
B	an organic acid halides

(summary of claim 1)

Dietz discloses a method to prepare an α-olefin polymer in the presence of a polymerization catalyst which comprises a particulate diluent and a product obtained by the contact of (A) a component solution obtained by combining (1) a metal dihalide compound which is selected from the group consisting of Group IIA metals and Group IIB metals of the Periodic Table and (2) a transition metal compound represented in the general formula of **$M(OR)_aX_{b-a}$ with M being zirconium and a being an integer between 0** and 4 and (B) a precipitating agent in a suitable solvent, which can be an organic acid halide in the general formula of **R"COX**, with R" being an alkyl, aryl, or cycloalkyl group or combinations thereof and X being a halide (col. 3, lines 10-26; col. 8, lines 55-64; claim 1).

The difference between the present claims and the disclosure of Dietz is the requirement of a method to prepare an isoolefin copolymer.

It is noted that olefin comprises isoolefin and has substantial chemical properties as isoolefin. Thus, it would be obvious to one of ordinary skill in the art at the time the invention was made to use the method disclosed by Dietz to prepare an isoolefin polymer and thereby obtain the present invention.

12. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being unpatentable over Le

Brasseur (US 4,465,781).

Le Brasseur discloses a method to prepare a copolymer of ethylene and α-olefin in the presence of a catalyst which comprises a catalyst component and an activator, the catalyst component being prepared by the steps of (a) reacting an **organic acid halide [R'COX]** with a magnesium alcoholate [$Mg(OR)_2$], (b) washing the product obtained from step (a) with a solvent, (c) reacting the product obtained from step (b) with an excess of a **transition metal halide** wherein the transition metal can be **zirconium**, and (d) washing and then drying the product obtained from step (c) (col. 2, line 44; claim 3) and the activator being a trialklaluminium (claim 6). Thus, the present claims are anticipated by the disclosure of Le Brasseur.

The difference between the present claims and the disclosure of LeBrasseur is the requirement of a method to prepare an isoolefin copolymer.

It is noted that olefin comprises isoolefin and has substantial chemical properties as isoolefin. Thus, it would be obvious to one of ordinary skill in the art at the time the invention was made to use the method disclosed by LeBrasseur to prepare an isoolefin polymer and thereby obtain the present invention.

13. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being unpatentable over Young et al. (WO 92/16477).

Young et al. disclose a method to polymerize C_3 and higher olefins in the presence of a catalyst system comprising (A) a soluble adduct of zirconium tetrahalide and an acid chloride [R(C=O)Cl] and (B) an alkyl metal which can be aluminum alkyl

(col. 3, lines 61-66; col. , lines 3-8; claim 1).

The difference between the present claims and the disclosure of Young et al. is the requirement of a method to prepare an isoolefin copolymer.

It is noted that olefin comprises isoolefin and has substantial chemical properties as isoolefin. Thus, it would be obvious to one of ordinary skill in the art at the time the invention was made to use the method disclosed by Young et al. to prepare an isoolefin polymer and thereby obtain the present invention.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

LING-SUI CHOI
PRIMARY EXAMINER

May 25, 2005